



309th Commodities Group



Machine Coolant Reduction Strategy

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Mission Overview



HILL AFB UTAH

**The 309th Commodities Maintenance Group provides
Maintenance, Repair, and Overhaul of Landing
Gear, Hydraulics, Armament, Power Systems, and
Advanced Composites Products and Components**

Four Squadrons

530th Power Systems Squadron

531st Commodities Squadron

532nd Landing Gear Squadron

533rd Technical Repair Squadron



Mission Overview



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Hydraulics



Chrome Plating



Structural Sup



Power Sys



Autoclave Cure



Ultrasonic Test



Wheels/Brakes



Machining



Composites



LO Testing



Landing Gear

Warfighter's First Choice

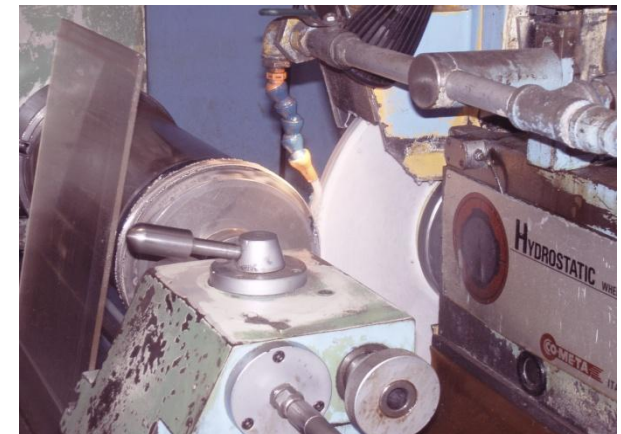
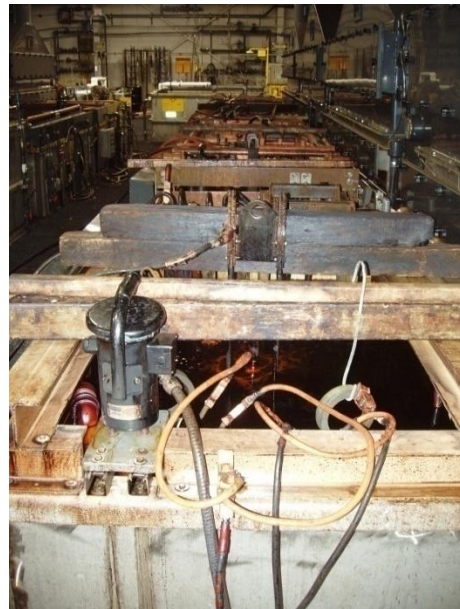


Background



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- **After manufacture & Chrome Plating:**
 - **Machining & grinding**
 - **Coolant is used to cool and lubricate**



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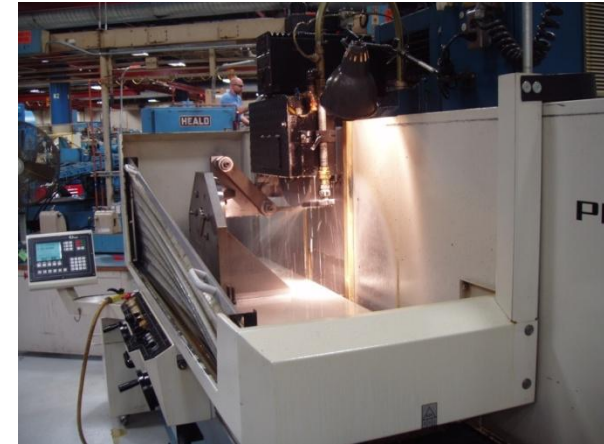
Background



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■ Coolant:

- Generated from six different machine shops
- Mixture of 90% water & 10% emulsified oil
- Degrades (tramp oils, bacteria, particles)
- Disposed of approximately 50,000 gallon annually





Problem



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- **Past Disposal Method Pumped to the Industrial Waste Treatment Plant (IWTP)**
 - Started causing problems with new Permit Limits
 - Banned discharge in 2006
- **Forced us to either Drum or Tank:**
 - Non RCRA cost of \$100K+





Solution



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■ Three prong Approach:

- Find a cheaper disposal contractor
- Increase the coolant working life
- Reduce volume of waste





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Solution



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■ Approach One:

- Contracted Safety Kleen - \$1.00 per gallon (Non-RCRA)
- Reduced disposal cost by 50%

■ Approach Two:

- Purchase 3 Freddy TOS Units
 - Filter
 - Kill bacteria
 - Remove tramp oil
- Doubled service life
- An additional cost savings of 50%





Solution



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■ Approach Three:

- Reduce volume even further
- Tested Sanborn UFV 250 Ultra filtration
- Membrane filtration of permeate (water)



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Solution



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■ Approach Three, Cont'd:

- Coolant transferred to UFV250
- Dehydrated with UFV250
- Concentrated to 10 – 15% of original volume



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Solution



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■ Approach Three, Cont'd:

- Concentrate transferred to holding tank for processing to Safety-Kleen
- Oil recovery and final disposal
- 2K to 3K gallons annually, down from 50K



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Cost\$\$\$



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■ Original Cost for Disposal	\$100K
■ Switching Disposal Contractor	(\$50K)
■ Implementation of Freddy TOS:	
■ Equipment cost	\$15K
■ Cost avoidance	(\$25K)
■ Implementation of UFV250:	
■ Equipment/installation cost	\$35K
■ Cost avoidance	(\$20k)



Cost\$\$\$



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Bottom Line!!

95% Reduction in Coolant Waste (bulk) Disposal and Costs



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Questions?



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